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King's Permian Fossils
King on
Northumberland
& Durham - Permian

W. King.

Organic remains of the
Permian rocks
of Northumberland.

1848.

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No. **2421.**

*To the Rev. J. P. Buckland,
Dean of Westminster,
with the Author's respects,*

CATALOGUE

OF THE

ORGANIC REMAINS

OF THE

PERMIEN ROCKS

OF

NORTHUMBERLAND AND DURHAM.

BY WILLIAM KING,

F. G. S. OF FRANCE.

NEWCASTLE-UPON-TYNE:

PRINTED FOR AND PUBLISHED BY THE AUTHOR,

AND SOLD BY ALL BOOKSELLERS.

1848.

At the time of the
the same time
the same time
the same time

PREFACE.

THE Permien Rocks of Northumberland and Durham consist, in a descending scale,—of (*a*) the crystalline and marly beds of Sunderland,—(*b*) the shelly and compact limestone of Humbleton, Pallion, and Garmundsway,—(*c*) the marl slate of Ferry Hill, Whitley, and Cullercoats,—and, (*d*) the lower new red-sandstone of Westoe, Claxheugh, and other places. Contemporaneous deposits occur at various parts in Germany, where they are termed, following the same order, (*a*) Stinkstein (including the Rauchwacke), (*b*) Zechstein, (*c*) Kupferscheifer, and (*d*) Rothe todt-liegendes: and, in the ancient kingdom of Permia, on the western-side of the Ural mountains, and in Petchora, bordering the Arctic sea, deposits of the same age are extensively developed. These deposits, together with the more recent red-sandstone of Cumberland, and the vale of Cleveland,—and their equivalent, the Vosgian grit of South Europe, constitute the Permien system of Sir Roderick I. Murchison, which is the uppermost divison of the primary or protozoic class of formations, and the next, as an overlying group, to the coal measures of this district.

Considering the position of the Permien Rocks in the great series of formations,—that they were deposited at the close of the primary period, and whilst the vegetable and animal kingdoms were undergoing most extensive changes,—it is

deemed, that a Catalogue of their Organic Remains, as far as the Counties of Northumberland and Durham are concerned, will not be without its local interest.

It now only remains to be stated, that this Catalogue is intended as a Prodrömus of a Monograph of British Permien Fossils, which the Author is preparing for the Palæontographical Society of London.

Newcastle-on-Tyne, Museum, July, 1847.

Various circumstances have operated in preventing the publication of this Catalogue at the above date: nor, as so much time has elapsed, would it have appeared at present, had it not transpired, that there was an attempt being made to forestall the Author's labours by one, to whom he had unreservedly communicated every particular of the views he entertained, on the local Permien Fossils, up to the Autumn of 1846,—the time when all correspondence ceased between them.

With respect to the Monograph, it is necessary to state, that its publication has been delayed by the late protracted illness of the Author: it is expected, however, to be completed in a short time.

Newcastle-on-Tyne, Collingwood Street, August, 1848.

CATALOGUE.

Fucoides (*Caulerpa*?) *lycopodoides*, A. Brongniart. *Voltzia Phillipsii*, Lindley and Hutton. *Fucoides selaginoides*, Brongn. It occurs in the marl slate of Ferry Hill and Thrislington Gap. Obscure impressions of probably the same plant are found in the corresponding rock at Whitley and Cullercoats. I possess a specimen of a plant, apparently a Confervites, from the marl slate at Midderidge.

Neuropteris Huttoniana, n. sp. Only single pinnules or leaflets, with the venation rather imperfectly exhibited, have fallen under my notice. They closely resemble the pinnules of *Neuropteris gigantea* in form, but the veins are wider apart, somewhat as in *N. heterophylla*. Thrislington, Midderidge, and Thickley, in marl slate.

Lepidodendron, *Calamites*, and *Sigillaria* occur in the lower new red-sandstone, Westoe.

Scyphia tuberculata, n. sp. *Form* cylindrical: *surface* tuberculated, with a central tube from which several smaller ones strike off to the surface. This sponge occurs at Humbleton and Dalton-le-dale.

Manon? *mammillaris*, n. sp. A mammillary polymorphous sponge, having its surface crowded with minute pores. Humbleton.

Petraia dentalis, n. sp. *Form* conical, and slightly curved: *cavity* deep, and longitudinally furrowed: *plates* of two sizes; the *largest* five or more in number, plain edged(?) and reaching half way to the centre; the *smallest* from one to four in number; *lamellar interspaces* with two very finely-denticulated slightly-prominent ridges. Humbleton.

Turbinolia Donatiana, n. sp. Vermiform; transversely wrinkled: longitudinal plates about eighteen: transverse plates irregularly distant. Humbleton Hill.

Stomatopora (Aulopora) dichotoma, Lamouroux. Humbleton.

Stenopora independens, n. sp. A branched species, resembling the Russian *S. spinigera* in having spinous processes surrounding the mouths of the tubes; but differing from it in having small interpolated tubes, and the large tubes suddenly bending outwards towards the surface. It occurs in most of the fossiliferous localities of the district.

Stenopora incrustans, n. sp. Resembling *Alveolites irregularis*, de Koninck, but it has wider interstitial spaces and a greater number of interpolated tubes. It is generally found encrusting encrinal internodes at Humbleton, and shells at Whitley.

Ceratophytes anceps, Schlotheim. Common in the various fossiliferous localities.

Ceratophytes dubius, Schl. Common like the former.

Fenestella retiformis, Schl.—*Retepora flustracea*, Phillips. Common.

Fenestella virgulacea, Phill. Common.

Fenestella Permiana, n. sp. This coral resembles the *Retepora Martis* of Fischer de Waldheim, and the *R. prisca* of Phillips. The meshes are generally arranged in linear series: both the longitudinal and transverse interstices are celliferous: the cells, which are closely packed (generally three on an interstice), have an oval aperture and a polygonal base: and the non-celliferous surface is finely longitudinally striated. It occurs rarely at Silksworth, Tunstall, and Humbleton.

Spirorbis helix, n. sp. (Humbleton and Byers' quarry), *Serpula obscura*, n. sp. (Hendon), and *Foraminites serpuloides*, n. sp. (Humbleton), are obscure fossils, which may be merely noticed at present.

Cyathocrinus ramosus, Schl. Common.

Cidaris Verneuiliana, n. sp. Plates subhexagonal, a little

longer transversely than longitudinally: *socket balls* large, perforated, placed on elevated bases: *glenoid circles* radiately crenulated: *muscular areas* concave, broadish, surrounded with an elliptical border of small tubercles in a single series. Two kinds of spines occur in the same beds containing this fossil: the one is thick, long, transversely ridged, and marked with broken longitudinal lines; the mesial line of the ridges is ornamented with a row of granules: and the other is much smaller and finely longitudinally striated. Perhaps the former belongs to the "socket balls," and the latter to the "small tubercles." Tunstall Hill and Humbleton quarry.

Lingula mytiloides, J. Sowerby. This species occurs in the marl slate of Ferry Hill, Midderidge, and Thrislington Gap.

Orbicula speluncaria, Schl. It occurs in the marl slate of Thrislington, and in the magnesian limestone of Tunstall Hill.

Terebratula elongata, Schl. Common.

Terebratula sufflata, Schl. Common.

Camerophoria Schlotheimi, Von Buch. Common.

Camerophoria globulina, Phillips.—*Terebratula id.*, Phill., "Encyclopædia Metropolitana," "Geology," pl. 3., fig. 3. Rather common.

Camerophoria multiplicata, n. sp. Subtriangular, somewhat pointed behind, rounded in front, and a little wider than long: *dorsal valve* with a round incurved beak, slightly-inclined lateral surfaces, and a broad deep flattened mesial furrow: *ventral valve* with strongly-inclined lateral surfaces, and a wide prominent flattened mesial ridge: *both valves* with numerous small obtuse folds, from five to eight in the furrow, and seven or more on the lateral surfaces. It differs from *C. Schlotheimi* in having smaller, and a greater number of folds: it also attains a larger size. Humbleton and Dalton-le-dale.

Spirifer convolutus, Phillips. Humbleton.

Spirifer alatus, Schl.—*Spirifer undulatus*, J. de C. Sowerby. Midderidge, Humbleton, and Tunstall Hill.

Spirifer Permianus, n. sp. *Form* semi-elliptical, twice as wide as long: *lateral surfaces* with four or more sharpish

rather-distant ribs: *mesial furrow* or *ridge* not much larger than the adjoining folds: *beak* erect. It differs from *S. alatus* in having only half the number of folds: the beak is less tumid and gibbous, and the lateral extremities are rounded instead of pointed. Humbleton and Tynemouth.

Spirifer cristatus, Schl. Not common.

Spirifer multiplicatus, J. de C. Sow. In order to preserve Mr. Sowerby's name, given to an undescribed species in Professor Sedgwick's Paper, I make free to use it for a small *Spirifer*, resembling the last, but differing from it in having a narrower and a more elevated area, a more gibbous beak, a more rounded marginal outline, and less prominent folds. Not common.

Atrypa pectinifera, J. de C. Sow. Humbleton and Tynemouth.

Martinia Clannyana, n. sp. A minute species: as wide as long: nearly smooth: *front* slightly emarginate: *deltidial valve* very convex, with a slight mesial furrow: *ventral valve* nearly flat: *area* equilateral: *deltidium* a little narrower than the area. This species closely resembles the Devonian *Atrypa unguicula* of J. de C. Sowerby. Ryhope Field House farm.

Martinia Winchiana, n. sp. This, which is a small species, resembles *Martina Clannyana* in form, but both valves are crowded with short hair-like declined radiating spines: Whitley.

Orthis pelargonata, Schl. Dalton-le-dale, Tunstall Hill, Humbleton, and Tynemouth.

Productus horridus, J. Sow. This shell is extensively distributed: it occurs at Humbleton, Tunstall Hill, Dalton-le-dale, Whitley, Midderidge, Mill field quarry, Garmonds-way, and Tynemouth.

Productus umbonillatus, n. sp. A scantily spinous, sub-triangular species, considerably less convex than *P. horridus*; and, instead of the umbone being large and gibbous as in the latter, it is small, pointed, and without any incurvation. Tunstall Hill and Dalton-le-dale.

Strophalosia Goldfussii—*Spondylus id*, Münster, Beiträge, vol. I. Humbleton, Ryhope Field House, Dalton-le-dale, and Tynemouth.

Strophalosia Morrisiana, n. sp. *Form* roundish: marked with numerous fine broken lines radiating from the nucleus: *area* wide, and slightly elevated: *dorsal valve* roundly convex, irregularly-wrinkled longitudinally on the sides, with several longish spines adpressed and directed forward on the back, erect or directed backward on the umbone and sides: *ventral valve* somewhat concave: *umbone* small and much impressed. This species differs from all the Palliobranchiate shells, with which I am acquainted, in possessing a large intervalvular plate corresponding, in size, to the ventral valve. Humbleton, Dalton-le-dale, Claxhough, Ryhope Field House Farm, Tunstall Hill, and Tynemouth.

Strophalosia spinifera, n. sp. *Form* roundish: *area* narrow and slightly elevated: *dorsal valve* roundly convex, with very long curved spines often somewhat arranged in lines radiating, and curving outwardly, from the nucleus: *ventral valve* concave, with very many declined longish spines having the same arrangement as those on the dorsal valve: *umbone* small, rounded, somewhat incurved, and slightly impressed. Should this shell be the *Productus Cancrini*, de Vern., my specific name will have to be cancelled. Perhaps it is the *Orthis excavata* of Geinitz? I have found it at Humbleton, Dalton-le-dale, Tunstall Hill, Hylton North Farm, Tynemouth, and Whitley.

Ostrea (?) Tayloriana, n. sp. A very doubtful shell as to genus; and, until better specimens, than I possess, are examined, it must remain an imperfectly described species. Byers' quar.

Pecten pusillus, Schl. Rather common.

Monotis speluncaria, Schl. This species is found in all the localities mentioned, also at Black Hall rocks.

Monotis radialis, Phill. *Pecten id.*, Phill., "Encyclopædia Metropolitana," "Geology," pl. 3, fig. 5.

Mytilus Hausmanni, Goldfuss.—*M. acuminatus*, J. de C. Sow. Rather common.

Mytilus septifer, n. sp. This species, a shorter and wider one than the last, is lobed in front like a *Modiola*, and furnished with a ridge that posteriorly bounds the anterior adductor muscular impressions. It occurs at Byers' quarry, Whitburn, Roker, Suter point, and Marsden, in a formation probably equivalent to the German Rauchwacke.

Edmondia Murchisoniana, n. sp. This species has a resemblance to *Sang. truncata*, Goldf. It is inequilateral, rather tumid, and finely striated: with a rectilinear hinge line, and obtusely rounded terminations. Humbleton and Tunstall Hill.

Cardiomopha modioliformis, n. sp. *Pleurophorus id*, King, cited in Geol. Russ. vol. I., p. 224. This species, in its marginal outline, bears a resemblance to *Mytilus Pallasii*, de Vern., but it is a shorter, and a more tumid shell, and its umbones are more incurved: in the latter character, and in being diagonally tumid, it approximates to *Cypricardia glabrata*, Phill. Old specimens occasionally become diagonally carinated like *Cypricardia rhombea*, Phill. Rare.

BAKEVELLIA, n. gen. This genus is proposed for some inequivalve shells hitherto placed in *Avicula*. It possessed two adductor muscles, and therefore has no relation to *Avicula*, which is a true Monomyarian: further, it is furnished with a plurality of cartilage pits (from two to five according to species), as in *Perna* and *Gervillia*; and it possesses anterior and posterior linear teeth similar to those of the Cucullæa-toothed Arks. *Bakevellia* appears to be related to *Pterinea*, but the latter has no cartilage pits.

Bakevellia ceratophaga, Schl. Rather common.

Bakevellia antiqua, Münster. Not so common as the last.

Bakevellia tumida, n. sp.—*Gervillia?* *id*, King, cited in Geol. Russ., vol. I., p. 225. The umbones are much divaricated, and the hinge plate, which is short, possesses generally five cartilage pits. Rather common.

Bakevellia bicarinata, n. sp. Nearly smooth, winged, and furnished with two faint ridges on its anterior lobes. This may be a variety of *B. antiqua*: Tunstall Hill.

Bakevellia Sedgwickiana, n. sp. Form somewhat acutely

rhomboidal; smooth; pointed in front; and scarcely winged. Tunstall.

Bysso-arca tumida, J. de C. Sow. Common.

Bysso-arca Kingiana, de Verneuil. Rarer than the last.

Leda Vintii, n. sp. *Form* a little inequilateral: *anterior end* the shortest, and rounded: *posterior end* attenuated, and rounded at the extremity: *umbones* rather tumid, and turned posteriorly: *surface* marked with slightly-waved prominent transverse lines, which suddenly become nearly obsolete on the posterior third of the valves: *pallial sinus* very small. Humbleton, Byers' quarry, and Whitley.

PLEUROPHORUS, n. gen. *Form* inequilateral: *cartilage* external: *anterior adductor muscular impressions* deeply excavated, often bounded posteriorly by a ridge: *pallial line* entire: *dentition* cardinal and posterior: *cardinal teeth* two in each valve, diverging inwardly, and interlocking alternately: *posterior teeth* linear; the receiving tooth in the left valve.

Pleurophorus costatus, Capt. T. Brown. Rather common.

Schizodus truncatus, n. sp. *Axinus id.*, King; and *A. parallelus*, King, cited in "Geol. Russ.," vol. 1, p. 224. This species is less obliquely truncated at the posterior end than *Schizodus (Axinus) obscurus*: it is finely concentrically threaded, more decidedly on the anterior than on the posterior half of the valves: its coloration consists of small spots on a light dark ground, resembling that of the recent *Circe Castrensis*. Rather common.

Solemya Phillipsiana, n. sp. This species has the anterior border of the posterior adductor muscular impressions corresponding to a line drawn vertically from the umbone to the ventral margin; and is marked externally with flat slightly-raised spreading bands *rather distant* from each other. Humbleton.

Solemya biarmica? de Verneuil. Tunstall Hill and Humbleton.

Astarte Vallisneriana, n. sp. Slightly inequilateral: ventral outline semicircular: umbones pointed: dorsal slope of each valve angulated: concentrically threaded. Whitley.

ALLORISMA, n. gen. Having satisfied myself that this genus, as I first described it,* comprises two distinct genera, one of which is the *Edmondia* of de Koninck, I will here briefly point out a few of its distinctive characters, as now restricted, reserving a fuller description for my Monograph. I consider *Allorisma regularis*† as the type of the genus. *Allorisma* possesses a siphonal inflexion, an edentulous hinge, and an external cartilage. It differs from *Pholodomya*—a closely related genus—in the want of ribs proceeding from the umbones to the ventral margins, the valves being more or less wrinkled transversely. The anterior muscular impressions have a low or proximo-ventral position as in *Thracia pubescens*.

Allorisma elegans, n. sp. *Form* very inequilateral: *both ends* closed; anterior one the shortest, and oblique superiorly; posterior one squarish: *umbones* somewhat gibbous: *dorsal slopes* with a faint angle running from the umbone to the posterior end of the shell: *surface* slightly wrinkled transversely, and crowded with minute pimples: *pallial sinus* shallowish. *Amphidesma lunulata*, Keyserling, of the Petchora Permian marls, may be the same species. Humbleton and Whitley.

Psammobia? *subpapyracea*, n. sp. A thin, smooth, elliptical species. *Length* one third of its width: *umbones* slightly prominent, one third of the width of the valves from the anterior end: *terminations* rounded. Humbleton.

Chiton Loftusianus, n. sp. A provisional description of this species has already been given in the "London Geological Journal," vol. I. I embrace the present opportunity of naming it after W. K. Loftus, to whom I was first indebted for the idea that it belonged to the genus *Chiton*. Tunstall Hill.

Macrocheilus symmetricus, n. sp. Fusiform: smooth: *whorls* slightly rounded: *mouth* oval, more rounded in front than behind, and a little more than a third of the shell in length.

* Annals of Natural History, November, 1844.

† Geol. Russ., vol. 2, pl. 19, fig. 9.—The fossil under this name, in pl. 21, fig. 11, is an *Edmondia*.

My largest specimen measures three quarters of an inch in length. Humbleton quarry and Tunstall Hill.

Loxonema rugifera, Phill. Humbleton quarry and Tunstall Hill.

Loxonema fasciata, n. sp. A subulate many-whorled smooth species, with two or more dark-spiral bands, crossed by others, on a light ground: its outer lip is inversely sigmoid. In form, it resembles the *Turritella Urei*, with which I formerly identified it. Humbleton, Tunstall Hill, Hawthorn Hive, and Southwick-lane House.

Turbo Mancuniensis, Brown. Tunstall Hill.

Turbo Tunstallensis, n. sp. Resembling the last, but with rather more tumid whorls, less prominent ridges, and a shorter spire. Tunstall Hill.

Turbo Permianus, n. sp. "Spires 4, smooth, length under a quarter of an inch; Hawthorn Hive. (M. S. Catalogue of fossils by Mr. Phillips of York)," cited by Sedgwick in Geol. Soc., 2nd s., vol. III., p. 18.

Turbo Thomsonianus, n. sp. This species resembles *T. Mancuniensis* in form, but its whorls are furnished with numerous spiral threads. It is marked with transverse coloured bands. Tunstall.

Natica Leibnitziana, n. sp. In this species the whorls increase rapidly in size, and are marked with zig-zag coloured bands: it has a flattened spire, and a slightly spreading inner lip. Tunstall Hill and Silksworth.

Pleurotomaria Permiana, n. sp. This species resembles the *P. carinata* of J. Sowerby, with which I formerly identified it, but it has a concave sinual band, and a smaller umbilicus: its coloration consists of straight, and not zig-zag longitudinal bands as in the latter: it is spirally threaded, and its pillar lip is perpendicular. Rather common.

Pleurotomaria nodulosa, n. sp. Spirally threaded, the threads crossed with rather strong lines of growth: with two spiral rows of tubercles, one situated immediately below the sinual band, and the other close to the suture: the sinual band is concave, and furnished with a mesial thread. Rather rare.

Pleurotomaria Tunstallensis, n. sp. This species resembles the *P. Permiana* in form, but it is non-umbilicated, and its pillar lip is oblique: it is also related to *P. carinata*, Sow., but instead of the umbilicus being closed "par une callosité assez épaisse et assez large," as stated by de Koninck of the latter, it is without any callosity, and its pillar lip is tranchant. Tunstall Hill.

Nautilus Freieslebeni, Geinitz. Humbleton quarry, Tunstall Hill, Silksworth, Dalton-le-dale, and Whitley.

Gyracanthus formosus, Agassiz. The Newcastle Museum possesses a fragment of a fossil, which I am happy in making out to be an Ichthyodorulite or dorsal spine of an extinct family of sharks. It is the impression of the inferior part of the anterior face, shewing the entire length of the root and a small portion of the obliquely ridged part: the root is longitudinally striated, and the obliquely ridged part tapers off to a point on the mesial line of the anterior face: the point is an inch and a quarter from the termination of the root. I feel persuaded that it is the *Gyracanthus formosus*. Lower new red-sandstone near Westoe.

Palæoniscus comtus, Ag.

Palæoniscus elegans, Sedgwick.

Palæoniscus glaphyrus, Ag.

Palæoniscus longissimus, Ag.

Palæoniscus macrothalmus, Ag. The foregoing species are found in nearly all the localities where the marl slate is exhibited, as at Midderidge, Thickleigh, Whitley, Cullercoats, Thrislington, Boldon, Ferry Hill, Houghton-le-Spring, &c. Two imperfect specimens of the genus have been found in the magnesian limestone, north of Marsden.

Palæoniscus angustus? Ag. The Newcastle Museum possesses a specimen from the marl slate, Whitley, resembling the fossil of this name figured by Agassiz, with this difference, that it has both lobes of the tail of the same length: in other respects, as the relative position of the fins, and the arrangement of the scales, it agrees with the *P. angustus*.

Platysomus macrurus, Ag. Thickley, Thrislington, and Ferry Hill.

Platysomus striatus, Ag.—*P. parvus*, Ag. It will be seen, that I have merged *Platysomus parvus* into this species. M. Agassiz founded the former on the figures given by Mr. Winch in the *Transactions of the Geological Society*, and not on an examination of the originals: these (which are in the Sunderland Museum) I have lately examined, and I cannot find any difference between them and an undoubted *P. striatus* in the Newcastle Museum. The draughtsman of Mr. Winch's figures has not copied the originals so closely as could be desired: he has, in consequence, incorrectly represented the dorsal and the ventral fin of the *same length*, the posterior part of the body *too round*, the head *too large*, and the root of the tail (which is injured in the originals) *too slender*. Besides occurring in marl slate with the last, in the localities named, this species has been found in the compact limestone in Pallion quarry.

Acrolepis Sedgwickii, Ag.

Pygopterus mandibularis, Ag.

Cælacanthus granulatus, Ag.

The three sauroidal fishes just cited occur in most of the marl slate localities already given.

Specimens of most of the fishes herein noticed are exhibited in the Museum of Newcastle-on-Tyne. It has long been my wish, that the Museum should be rich in these fossils, and that they should form one of its attractive features. The collection, as it now exists, will shew, that I have not laboured without some success.

SUMMARY.

Plants	..	..	..	..	5 genera,	5 species.		
Sponges	..	..	..	..	2	"	2	"
Corals	..	..	..	..	6	"	10	"
Echinoderms	{ <i>Encrinidia</i>				1	"	1	"
	{ <i>Enchinidia</i>				1	"	1	"
Annelids, &c.	..	..	..	..	3	"	3	"
Shells	{ <i>Palliobranchiata</i>				10	"	21	"
	{ <i>Lamellibranchiata</i>				15	"	23	"
	{ <i>Gasteropoda</i>				6	"	12	"
	{ <i>Cephalopoda</i>				1	"	1	"
Fishes	..	..	..	..	6	"	12	"
Total					56		91	

2





